

ABSTRACT OF THE DISCLOSURE

Devices and methods are disclosed for synthesizing compounds on the surface of supports. The devices are flow devices, which include a housing comprising a housing chamber. The housing has an opening adapted for insertion of a support into the housing chamber. A sealing member is movably mounted in the housing chamber and adapted to engage the support to form a reagent chamber between a surface of the support and a surface of the sealing member. A mechanism is included for moving the sealing member within the housing chamber. The device has both an inlet and an outlet, which are both in fluid communication with the reagent chamber. In the methods of the invention a support is placed into a chamber of a device such as described above. The mechanism adapted to engage the support on a surface opposite the surface engaged by the sealing member is activated to urge the support toward the sealing member. The pressure-activated mechanism is activated to urge the support against the aforesaid mechanism and against an interior wall of the housing chamber to form the reagent chamber. A fluid reagent for conducting the reaction step is introduced into the reagent chamber by means of the inlet. Thereafter, the fluid reagent is removed from the reagent chamber. The pressure-activated mechanism is deactivated and the support is removed from the housing chamber. In this way the reagent chamber is formed and un-formed *in situ*.

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